

**US Army Corps  
of Engineers**  
New Orleans District

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## **PUBLIC NOTICE:**

### **Programmatic Supplemental EIS Scoping Meeting Announcement**

**April 2002**

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#### **Louisiana Coastal Area, Louisiana — Comprehensive Coastwide Ecosystem Restoration Feasibility Study**

##### **Introduction**

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Army Corps of Engineers (USACE), New Orleans District intends to prepare a draft Programmatic Supplemental Environmental Impact Statement (PSEIS) for the Louisiana Coastal Area, Louisiana — Comprehensive Coastwide Ecosystem Restoration Feasibility Study (hereinafter LCA Comprehensive Study). The LCA Comprehensive Study will build on the restoration strategies presented in the Coast 2050 Plan and the May 1999, Reconnaissance Report “Section 905(b) (WRDA 86) Analysis: Louisiana Coastal Area, Louisiana—Ecosystem Restoration.”

The expected outcome of the LCA Comprehensive Study is the identification of restoration projects that would result in sustaining a coastal ecosystem that supports and protects the environment, economy and culture of southern Louisiana and that contributes greatly to the economy and well being of the nation. More than a million acres of Louisiana coastal wetlands have been lost within the last 60 years with current estimates of the Louisiana coastal land loss rate ranging between 25 and 30 square miles per annually (16,000 to 19,000 acres), or about one football field every 25 minutes. Louisiana contains about 40 percent of the wetlands in the United States; yet, nearly 80 percent of all coastal land loss in the lower 48 states today is occurring within Louisiana. Even with current restoration efforts, Louisiana is projected to lose nearly 400,000 acres of marsh and 232,000 acres of swamp by the year 2050, an area the size of Rhode Island.

The LCA Comprehensive Study will supplement previous Federal studies, combining the “lessons learned” from previous Louisiana

coastal wetlands restoration efforts, and develop the existing Coast 2050 restoration strategies into projects for the creation of a programmatic, coast-wide, ecosystem restoration plan. The LCA Comprehensive Study is envisioned as the next step in the natural progression and evolution in our efforts to address the problems and determine opportunities for the adaptive environmental assessment and restoration of the coastal wetlands of Louisiana.

##### **Scoping Process**

The National Environmental Policy Act (NEPA) provides for an early and open public process for determining the scope of issues, resources, impacts, and alternatives to be addressed in the PSEIS. This process is referred to as the Scoping Process. The purpose of this document is to announce the scoping meetings for the Louisiana Coastal Area, Louisiana — Comprehensive Coastwide Ecosystem Restoration Feasibility Study. Ideas and issues brought forth during the scoping process can be incorporated into the PSEIS preparation.

The scoping process is designed to provide an early and open means of determining the scope of issues (problems, needs, and opportunities) to be identified and addressed in the draft PSEIS. Scoping is the process used to: a) identify the affected public and agency concerns; b) facilitate an efficient PSEIS preparation process; c) define the issues and alternatives that will be examined in detail in the PSEIS; and d) save time in the overall process by helping to ensure that the draft statements adequately address relevant issues. Scoping is a process, not an event or a meeting; it continues throughout the planning for a PSEIS and may involve meetings, telephone conversations, and/or written comments.

##### **Study Authority**

This study is authorized through Resolutions of the U.S. House of Representatives and Senate Committees on Public Works, October 19, 1967 and April 19, 1967.

##### **Study Area**

The LCA Comprehensive Study will evaluate the restoration strategies identified in the Coast 2050 Plan for each of the four major hydrologic regions of the state, developing those strategies, and selecting plans that best address the ecosystem restoration needs for the entire Louisiana coastal area, while complying with applicable rules, regulations and administration policy. Figure 1 displays the general study area for the Louisiana Coastal Area authority. Figure 2 displays the four Coast 2050 regions and the nine major coastal basins.

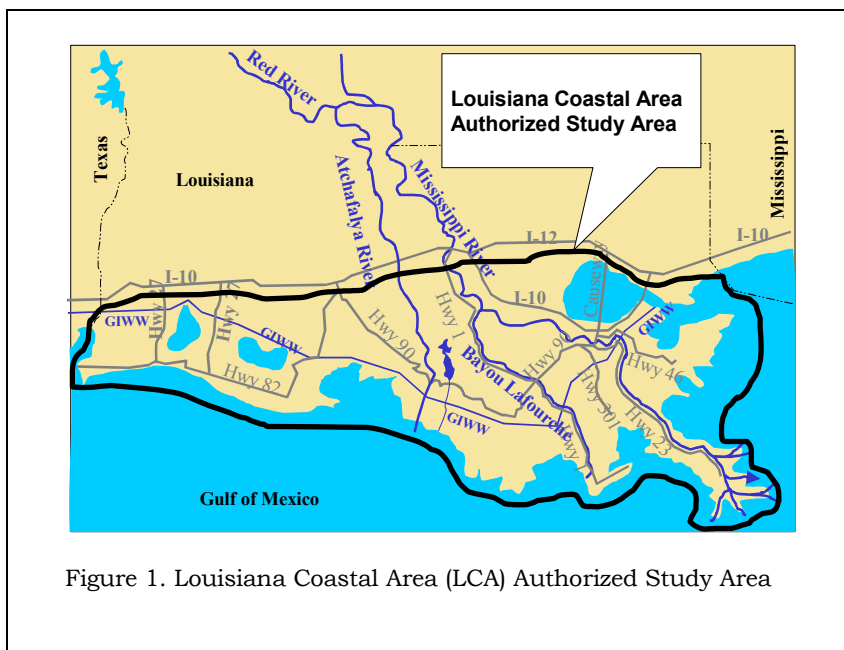


Figure 1. Louisiana Coastal Area (LCA) Authorized Study Area

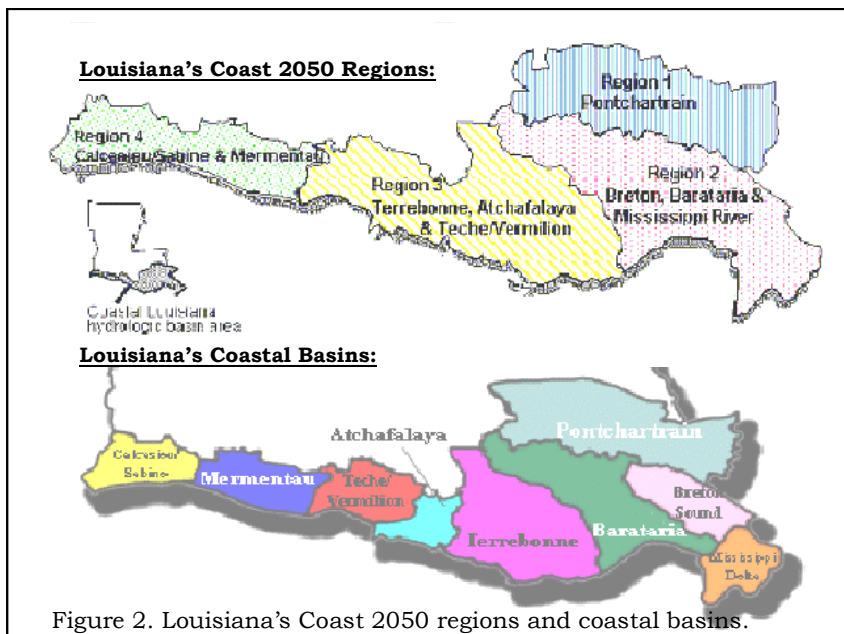


Figure 2. Louisiana's Coast 2050 regions and coastal basins.

## Proposed Action

Building on the Coast 2050 Plan and the May 1999, 905(b) Reconnaissance Report, the Corps proposes to prepare a PSEIS for the LCA Comprehensive Study. The proposed action would assess, at a feasibility programmatic-level, coastal restoration projects that would sustain a coastal ecosystem that supports and protects the environment, economy and culture of Southern Louisiana and that contributes greatly to the economy and well being of the nation. The LCA Comprehensive Study will supplement previous NEPA documents, combining the “lessons learned” from previous Louisiana coastal wetlands restoration efforts, and develop the existing Coast 2050 restoration strategies into projects for the creation of a programmatic, coast-wide, ecosystem restoration plan.

In December 1998 the Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation Authority (constituted under Act 6 R.S. 49:213.1 *et seq.*) prepared and adopted the Coast 2050 Plan as their official restoration plan. The December 1998 report “Coast 2050: Toward a Sustainable Coastal Louisiana”, also known as the “Coast 2050 Plan”, was developed in recognition of the need for a single comprehensive plan for restoration and sustainability of the Louisiana coastal area. The Coast 2050 Plan, which has been recognized by the state of Louisiana, five Federal agencies, and the local coastal parish governments of Louisiana, serves as the joint coastal restoration plan of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) and the Louisiana State Wetlands Authority (November 1990, Pub. L. 101-646, Title III).

The LCA Comprehensive Study will assess, at a programmatic feasibility-level, the Coast 2050 Plan. Specifically, the LCA Comprehensive Study will evaluate the restoration strategies identified in the Coast 2050 Plan for each of the four major hydrologic regions of the state, developing those strategies, and selecting plans that best address the ecosystem restoration needs for the entire Louisiana coastal area, while complying with applicable rules, regulations and administration policy.

The purpose of the LCA Comprehensive Study is to determine the feasibility of sustaining a coastal ecosystem that supports and protects the environment, economy and culture of southern Louisiana and that contributes greatly to the economy and well being of the nation. Specifically, the LCA Comprehensive Study will determine the feasibility of achieving the following restoration goals:

1. Sustaining a coastal ecosystem with the essential functions and values of the natural ecosystem;
2. Restoring the ecosystem to the highest practicable acreage of

- productive and diverse wetlands; and
3. Accomplishing this restoration through an integrated program that has multiple use benefits, benefits not solely for wetlands, but for all the communities, industries and resources of the coast.
4. Developing a comprehensive plan that is coordinated and consistent with other major land use and infrastructure features, particularly with respect to navigation, hurricane protection/flood control, and oil and gas production.

The LCA Comprehensive Study, in addition to conducting a programmatic environmental impact assessment, will supplement the findings from the following NEPA documents:

1. The draft EIS "Land Loss and Marsh Creation, St. Bernard, Plaquemines and Jefferson Parishes, Louisiana" (USACE 1990);
2. The EIS titled "Coastal Wetlands Planning, Protection and Restoration Act Louisiana Coastal Wetlands Restoration Plan" (La Coastal Wetlands Conservation and Restoration Task Force, 1993); and
3. The "Programmatic Hydrologic Management Environmental Impact Statement and Appendixes" (USACE 1996).

Additionally, the LCA Comprehensive Study will utilize and compliment the findings from the following reports and studies:

1. The "Mississippi and Louisiana Estuarine Areas Reconnaissance Report" (USACE 1981);
2. The "Louisiana Coastal Area, Louisiana, Shore and Barrier Island Erosion" Initial Evaluation Study (USACE 1984);
3. MRC/MVD Task Group Report (USACE 1985);
4. Louisiana Coastal Area- Mississippi River Delta Study Recon (USACE 1990);
5. Louisiana Coastal Area – Ecosystem Restoration, Louisiana reconnaissance report approved May 1999; and
6. Mississippi Mississippi River Sediment, Nutrient, and Freshwater Redistribution (MRSNFR) Study (USACE 2000).

#### **Need for the Study.**

The 905(b) Reconnaissance Report recommended that the Coast 2050 plan proceed to the feasibility phase, contingent upon the execution of a Feasibility Cost Sharing Agreement (FCSA) with a non-Federal Sponsor. An FCSA was executed with the Louisiana Department of Natural Resources on February 17, 2000 and amended on March 14, 2002.

The 905(b) Reconnaissance Report estimates that more than a million acres of Louisiana coastal wetlands have been lost within the last 60 years and the current land loss rate ranges between 25 and 30 square miles per annually (16,000 to 19,000 acres), or about one

football field every 25 minutes. This accounts for nearly 80 percent of all coastal land loss in the lower 48 states today. The 905(b) Reconnaissance Report concludes that even with current restoration efforts, Louisiana is projected to lose nearly 400,000 acres of marsh and 232,000 acres of swamp by the year 2050, an area the size of Rhode Island.

In February 2002, the Governor's Committee on the Future of Coastal Louisiana (COFCL) prepared a report, "Saving Coastal Louisiana: Recommendations for Implementing an Expanded Coastal Restoration Program," which provided recommendations as a starting point for a renewed and expanded coastal restoration effort. The COFCL report characterizes Louisiana's land loss crisis as an emergency of untold cost to the state of Louisiana and the nation that must be confronted now, with all available resources. The devastation of the coastal land loss will, according to the COFCL report, directly affect our nation's security, navigation, energy consumption, and food supply. The COFCL report further elaborates that the potential loss of lives, infrastructure, industry, ecosystems and culture cannot be overstated.

#### **Study Alternatives**

During the Coast 2050 public meetings conducted in 1998, 83 regional ecosystem restoration strategies were developed. In January 2001, these strategies were revised into 88 regional ecosystem restoration strategies. The LCA Comprehensive Study will develop these strategies into features that will be developed further into an array of alternatives that consist of projects. Other restoration alternatives that will be considered include the No Action Alternative, as well as strategies suggested during the scoping process. Alternatives will be evaluated to ensure compliance with current Federal and state laws and regulations. Potential adverse effects of strategies will be identified and recommendations for mitigation measures, if appropriate, will be suggested. A programmatic supplemental EIS is being prepared because of the potential for significant direct and indirect, secondary and cumulative impacts on the human and natural environment.

#### **Resources/Issues to be addressed in the PSEIS**

A tentative list of significant resources to be evaluated in the PSEIS includes elements of the natural environment, such as plants and animals, natural waterways, and waterbodies; elements of the man-made environment such as water quality, drainage patterns, floodplains, air quality, noise, regulated hazardous wastes, socioeconomic, and transportation; as well as historic and cultural resources.

An intensive public involvement program will be initiated and maintained throughout the study to solicit input from affected Federal, State, and local agencies, Indian tribes, and interested private organizations and individuals. Scoping is a critical component of the overall public involvement program. The scoping process is designed to provide an early and open means of determining the scope of issues (e.g., problems, needs, and opportunities) to be identified and addressed in the PSEIS.

#### **Public Action Requested**

A series of Scoping meetings will be held on the following dates and at the designated locations. All scoping meetings will begin promptly at 7:00 PM on the designated date.

April 15, 2002: at the LSU Agriculture Center Extension Office, 1105 West Port Street, Abbeville, Louisiana 70510

April 16, 2002: at McNeese State University, Hardtner Hall, Stokes Auditorium, 550 Sale Road, Lake Charles, Louisiana 70609

April 17 at the Belle Chase Auditorium, 8398 Highway 23, Belle Chase, Louisiana 70037

April 18, 2002 at Southeastern Louisiana University, Room 133, University Center, 700 West University Avenue, Hammond, Louisiana 70402

April 22, 2002: at Peltier Park, 151 Peltier Park Drive, Thibodaux, Louisiana, 70301.

April 24 at the Morgan City Municipal Auditorium, 928 Myrtle Street, Morgan City, Louisiana 70380

Scoping meetings will begin with a brief description of the PSEIS process, the Corps study process, and the study strategies. Scoping meeting participants will be divided into smaller groups in which a facilitator for each group will record the participants' answers to the following questions:

***Question #1. What are the most important issues, resources, and impacts that we should consider in the PSEIS and the study process?***

***Question #2. Are there any other Coast 2050 coastwide or regional strategies or modifications to existing Coast 2050 coastwide or regional strategies that we should consider in the PSEIS and the study process?***

Scoping meeting participants, and other interested parties, are requested to provide answers to the two questions as well as other

areas of concern to them. Comments will be summarized and described in a "Scoping Document" that will be made available to interested parties. In addition to comments made at the scoping meeting, written comments will be accepted by letters postmarked no later than May 9, 2002.

#### **For Further Information**

Interested parties are encouraged to express their concerns at any time during the study process. Please bring this Scoping Notice to the attention of parties known to have interest in Louisiana coastal restoration and other water resources related problems in the study area.

Questions regarding the PSEIS should be addressed to Dr. William P. Klein, Jr., CEMVN-PM-RS, P.O. Box 60267, New Orleans, Louisiana 70160-0267, telephone: 504 862-2540, fax: 504-862-2572; or e-mail: [william.p.klein.jr@mvn02.usace.army.mil](mailto:william.p.klein.jr@mvn02.usace.army.mil)

Questions regarding the proposed study should be addressed to the Study Manager Mr. Troy Constance, CEMVN-PM-W, P.O. Box 60267, New Orleans, Louisiana 70160-0267, telephone: 504-862-2742, fax: 504-862-2572; or e-mail: [Troy.G.Constance@mvn02.usace.army.mil](mailto:Troy.G.Constance@mvn02.usace.army.mil)

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Date

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Thomas F. Julich  
Colonel, U.S. Army  
District Engineer

## **Coast 2050 Ecosystem Restoration Strategies**

### **Coast 2050--Strategic Goals**

Goal 1: Assure vertical accumulation to achieve sustainability.

Goal 2: Maintain estuarine gradient to achieve diversity.

Goal 3: Maintain exchange and interface to achieve system linkages.

### **Coast 2050 –Coastwide Common Strategies**

1. Beneficial use of dredged material from maintenance operations to create, restore or protect wetlands.
2. Dedicated dredging to create, restore, or protect wetlands.
3. Herbivory control.
4. Stabilization of the width and depth of major navigation channels and other water bodies at their point of intersection.
5. Maintenance of Gulf, bay and lake shoreline integrity.
6. Management of pump and gravity-flow outfall for wetland benefits.
7. Vegetative plantings.
8. Maintain, protect, or restore ridge functions.
9. Terracing.
10. Offshore and riverine sand and sediment resources.
11. Diversions and riverine discharge.
12. Management of diversion outfall for wetland benefits.

### **Coast 2050 Region 1—Regional ecosystem strategies**

1. Small Mississippi River diversion at upper Maurepas Basin with outfall management
2. Small Mississippi River diversion at middle/lower basin with outfall management.
3. Restore natural drainage patterns.
4. Provide diversion-related flood protection where needed.
5. A small diversion, starting with less than or equal to 4,000 cfs (unless monitoring dictates otherwise) from the Mississippi River through the Bonnet Carre' Spillway by opportunistically removing pins from the water control structure.
6. A small diversion of the Mississippi River into LaBranch wetlands.
7. A small diversion of Jefferson Parish drainage into LaBranch wetlands.
8. Wetland sustaining diversion from the Mississippi River near Violet once the MRGO is closed to deep draft navigation.
9. Dedicated delivery of sediment for marsh building.
10. Maintain shoreline integrity of Lake Pontchartrain to protect regional ecosystem values.
11. Maintain shoreline integrity of Lake Borgne.
12. Protect the outer shoreline of the Biloxi Marshes.
13. In unleased, near-shore areas, develop oyster reefs and preclude

oystering in these areas.

14. Maintain Chandeleur Islands and investigate enhancing restoration by requesting special exemption from the wilderness area restrictions from Congress.
15. Maintain Eastern Orleans Land Bridge by marsh creation and shoreline protection.
16. Restore and maintain landbridge between MRGO and Lake Borgne with created marshes and shoreline protection.
17. Close MRGO to deep draft navigation when adequate container facilities exist on the river Expedite planning for the Millennium Port alternatives and coordinate such planning with Coast 2050 objectives.
18. Restore and stabilize the entire north bank of the MRGO.
19. Construct a sill at Seabrook.

### **Coast 2050 Region 1--Regional programmatic recommendations**

1. Water quality improvement and Coordinate between Pontchartrain Basin Partnership Act and Lake Pontchartrain Basin Watershed Plan (Lake Pontchartrain mapping unit).
2. Coordinate proposed flood control measures with Coast 2050 Plan (North Shore Marshes mapping unit).
3. Restrict West Pearl River dredging (Pearl River Mouth mapping unit).
4. Nominate as National Estuarine Research Reserve (NOAA) (Lake Maurepas and Manchac Land Bridge West mapping units).
5. Extend Joyce and Manchac Wildlife Management areas (Manchac Land Bridge East mapping unit).
6. Reduce draining and development of marshes (Tchefuncte River Mouth mapping unit).
7. Consider adding to Bayou Sauvage National Wildlife Refuge (LaBranch Wetlands mapping unit).
8. Limit draft of MRGO vessels to 36 ft. (authorized channel depth) (South Lake Borgne mapping unit).
9. Enhance near-shore oyster reefs/no-oystering zone near shore (Lake Borgne , Biloxi Marshes, and Eloi Bay mapping units).

### **Coast 2050 Region 2--Regional ecosystem strategies**

1. Construct small diversions into upper basin swamps with outfall management.
2. Restore natural drainage patterns in upper basin swamps.
3. Prevent diversion-related flooding and remove diverted waters from the upper basin.
4. Use existing or future locks to divert Mississippi River water.
5. Operate existing diversions and manage their outfall.
6. Enrich existing diversions with sediment.

**Coast 2050 Region 2--Regional ecosystem strategies (continued)**

7. Continue building and maintaining delta splays.
8. Construct small diversions into marsh with outfall management.
9. Construct a sediment trap in the Mississippi river south of Venice and utilize the material to create marsh and/or restore barrier islands.
10. Construct a delta-building diversion in the Myrtle Grove/Naomi area (about 15,000 cfs).
11. Construct delta-building diversion in Bastian Bay/Fort Jackson area (about 15,000 cfs).
12. Construct delta-building diversion between Main Pass and Baptiste Collette Bayou (about 50,000 cfs).
13. Construct a delta-building diversion into the American Bay/California Bay area (about 100,000 cfs).
14. Construct delta-building diversion through controlled crevasses into the Quarantine Bay area.
15. Prevent the loss of bedload into deep gulf waters off the Continental Shelf by relocating the Mississippi River Navigation Channel.
16. Dedicated dredging and/or beneficial use of dredged material to create marsh in the Clovelly, Little Lake, Caminada Bay, and Fourchon mapping units.
17. Construct a large conveyance channel to create a delta lobe in Little Lake and Caminada Bay mapping units.
18. Gap spoil banks and plug canals in lower bay marshes.
19. Construct wave absorbers at the heads of bays.
20. Construct reef zones across bays.
21. Extend and maintain barrier headlands, islands and shorelines.
22. Extend and maintain barrier shoreline from Sandy Point to Southwest Pass.
23. Build entire CWPPRA Barataria Basin Land Bridge shoreline protection project.
24. Preserve bay and lake shoreline integrity on the land bridge.
25. Dedicated dredging and/or beneficial use of dredged material to create marsh on the land bridge.
26. Build the Bayou Lafourche Siphon and Pump project.
27. Expedite planning for the Millennium Port alternatives and coordinate such planning with Coast 2050 objectives and strategies.

**Coast 2050 Region 2-- Regional programmatic recommendations**

1. Allow for selective harvesting of replanted trees in mitigation banks (Baker and Des Allemands mapping units).
2. Restore barrier islands (Fourchon mapping unit).
3. Use alternative sources of sediment such as red mud, compost, etc. (Caminada Bay mapping unit).

4. Study the borrow canal salinity intrusion issue (Lake Washington/Grand Ecaille and Bastian Bay mapping units).

**Coast 2050 Region 3-- Regional Ecosystem Strategies**

1. Improve hydrology and drainage in the Verret Subbasin.
2. Increase deltaic land building where feasible.
3. Lower water levels in upper Penchant marshes.
4. Enhance Atchafalaya River influence to Terebonne Basin marshes, excluding upper Penchant marshes (Minors Canal/Bayou DuLarge to Bayou Lafourche).
5. Establish multipurpose hydrologic control of any navigation canals.
6. Stabilize banks and/or cross sections of any navigation channels for water conveyance and/or for restoring hydrology of adjacent marshes.
7. Maintain or direct Atchafalaya River water or other freshwater sources and sediment through the GIWW or other water sources.
8. Dedicated delivery and/or beneficial use of sediment for marsh building by any feasible means Build land in upper Timbalier Subbasin by sediment diversion from the Mississippi River via a conveyance channel.
9. Restore historic hydrologic conditions of major tidal exchange points or prevent adverse tidal exchange points between the Gulf/lake, lake/marsh, bay/marsh, Gulf/bay and marsh/navigation channel locations.
10. Protect, restore and maintain ridge functions.
11. Maintain shoreline integrity and stabilize critical areas of Vermilion, East and West Cote Blanche, Atchafalaya, Caillou, Terrebonne and Timbalier Bay systems including the Gulf shoreline.
12. Optimize GIWW flows into marshes and minimize direct flow into bays.
13. Construct interior islands and/or reefs to protect bay/lake shoreline and/or to restore hydrology Restore and maintain the barrier islands and Gulf shorelines such as Isle Dernieres, Timbalier barrier island chains, Marsh Island, Point au Fer and Cheniere au Tigre (including back barrier beaches).
14. Maintain Vermilion, East and West Cote Blanche bays as brackish.
15. Reduce sedimentation in bays.
16. Create an artificial reef complex including one extending from Point Chevreuil southward.

**Coast 2050 Region 3--Regional programmatic strategies**

1. Prevent the negative effects of shell dredging in the region.

### **Coast 2050 Region 3--Regional programmatic strategies (continued)**

2. Conduct additional studies on the influence of river water, leveraging existing studies already underway and expanding the measurement criteria.
3. Exotic or introduced aquatic species control to prevent marsh erosion.
4. Develop and support a comprehensive Barrier Island/Shoreline restoration/mitigation initiative, not limited to wetland issues.
5. Establish multi-purpose control of HNC of other navigation channels (freshwater and sediment distribution salinity control, hurricane protection and navigation).
6. Establish statewide plan for management of surface water and groundwater supplies.
7. Flood protection (St. Louis Canal mapping unit).
8. Maintain levees & Water quality improvement (Devil's Swamp mapping unit).
9. Protect ground water between Perry/Big Woods (recharge area) from saltwater intrusion (Big Woods mapping unit).
10. Eliminate any new dredging of canals on the islands; directional drilling to prevent new development footprints on the islands; Oilfield companies-help to restore islands (Timbalier Island Shorelines mapping unit).
11. Wake limit control (Field's Swamp mapping unit).
12. Directional drilling to prevent new development footprints on the islands; eliminate any new dredging of canals on the islands; oilfield companies-help to restore the islands (Isles Dernieres Shorelines mapping unit).
13. Amend Falgout Canal Project water management plan; Flood protection for both sides of channel.
14. Wake limit control established and enforced (North Houma Ship Canal Wetlands mapping unit) quality/wastewater management (Merchant De Cade mapping unit).

### **Coast 2050 Region 4-- Regional Ecosystem Strategies**

1. Operate locks to evacuate excess water over that level specified by the USACE structure operational plan from the Mermentau Lakes Subbasin.
2. Operate existing Calcasieu Lock specifically to evacuate excess water, after timely building of a new lock on a parallel channel specifically for navigation and coordinate with the USACE to implement the lock.
3. Manage watershed to reduce rapid inflows into the Mermentau Lakes Subbasin.
4. Move water from Lakes Subbasin across Hwy. 82 including outfall

management and flood protection where needed.

5. Restore the connection of the original Mermentau River to the Gulf of Mexico and constrict the width and depth of the Mermentau River Ship Channel to its authorized dimensions
6. Use dedicated dredging or beneficial use of sediment for wetland creation or protection.
7. Maintain or direct Atchafalaya River water or other freshwater sources and sediment inflow through the GIWW or other channels.
8. Restore hydrologic conditions throughout the region to protect wetlands from hydrologic modification and maintain navigation where necessary at major tidal exchange points specifically at the Gulf to lake and lake to marsh interchanges.
9. Restore wetland hydrology to previously drained wetlands by modifying pumps and/or water control regimes. This would be accomplished through voluntary agreements with private landowners.
10. Control adverse salinity and tidal amplitude in the Calcasieu Ship Channel between the Gulf of Mexico and Calcasieu Lake at levels sufficient to protect and restore existing wetlands.
11. Maintain Sabine River inflow at levels sufficient to restore and protect wetlands.
12. Salinity and tidal amplitude control at Sabine Pass sufficient to restore and protect wetlands while maintaining navigation.
13. Salinity reduction of Sabine Lake at the Causeway.
14. Salinity control on the east shoreline of Sabine Lake and Sabine Pass.
15. Salinity control in the GIWW east of Sabine River.
16. Stabilize Grand Lake and White Lake shorelines.
17. Stabilize Gulf of Mexico shoreline in the vicinity of Rockefeller Refuge from the old Mermentau River to Dewitt Canal.
18. Stabilize the Gulf of Mexico shoreline from Calcasieu Pass to Johnson's Bayou.
19. Maintain Atchafalaya River mudstream along the Gulf of Mexico region 4 shoreline.
20. Restore long-shore sediment flow across the mouth of Calcasieu Pass.
21. Restore long-shore sediment across the mouth of Mermentau Ship Channel.
22. Prevent the coalescence of Grand and White lakes.
23. Prevent the coalescence of Grand Lake and the GIWW.

### **Coast 2050 Region 4--Regional programmatic recommendations**

1. Provide source of freshwater to upper Mermentau basin during drought (channel water from the Atchafalaya across a 10-mile stretch of St. Landry Parish).

**Coast 2050 Region 4--Regional programmatic recommendations  
(continued)**

2. The Calcasieu Locks projects should be funded 100% (target date of 2004 for feasibility phase).
3. Restrict sand dredging.
4. Allow for limited estuarine organism access.
5. Maintain lake as a low salinity fresh to intermediate ecosystem.
6. Maintain lake's subbasin target water level.
7. Monitor fisheries access at the locks.
8. Navigation safety.
9. Contingency plan for the adverse impacts of the Texas Water Development Board Plan (research and development).
10. Restore/maintain hydrology.
11. Increase water quality.
12. Maintain ridge function.
13. Maintain Toledo Bend/Sabine Lake freshwater inflows.
14. Address bullwhip mortality.